**REVIEW FOR ECOLOGY UNIT TEST**

**Topics Covered:**

* Ecology Vocabulary [See below]
* Sustainability [2.3]
* Energy Flow in Ecosystems (including photosynthesis & cellular respiration) [2.5]
* Food Chains, Webs, Ecological Niches [2.6 & Focus on Math p.52-53]
* Water & Carbon Cycles [2.7]
* Biotic & Abiotic Limiting Factors & Carrying Capacity [2.8]
* Biodiversity [3.3]
* Invasive Species [3.7]
* Pesticides [4.4]

**Test Breakdown:**

Knowledge/Understanding - 25 marks

-Matching (10 marks), True/False (5 marks), Multiple Choice (10 marks)

Communication - 16 marks

Thinking/Investigation - 12 marks

Application - 14 marks

**Vocabulary:**

* Atmosphere
* Biosphere
* Habitat
* Ecosystem
* Biotic Factors
* Abiotic Factors
* Population
* Community
* Sustainable Ecosystem
* Radiant Energy
* Photosynthesis
* Cellular Respiration
* Producer
* Consumer
* Ecological Niche
* Food Chain
* Food Web
* Trophic Level
* Limiting Factor
* Tolerance Range
* Carrying Capacity
* Biodiversity
* Extinct
* Invasive Species
* Pest
* Pesticide

**Review Questions:**

1. a) Explain how the extinction of one species can affect the food chain in an

ecosystem?

1. Explain why the extinction of a species in a jungle ecosystem would have **less impact on the food** **chain** than the extinction of a species in a tundra ecosystem. (p. 89)

2. Consider the following food web: grass moose wolves crows

coyotes

**Table 1.** Consequences of removing the wolf population from the food web.

|  |  |  |
| --- | --- | --- |
| **Population affected** | **Increase or decrease?** | **Explanation** |
| Coyote |  |  |
| Moose |  |  |
| Grass |  |  |
| Crow |  |  |

3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_What is the source of energy for organisms on Earth? (p. 38)

4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ How much of the Sun’s energy warms the surface of the

Earth?

5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ How much of the Sun’s energy is actually used by green

plants to make food?

6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ How much of the Sun’s energy is reflected by clouds or

the Earth’s surface?

7. **Table 2.** Energy transfer in food chains. (p. 44)

|  |  |  |  |
| --- | --- | --- | --- |
| **Energy level** | **Producer, primary consumer,**  **or secondary consumer?** | **Plant, herbivore, or carnivore?** | **Most energy, lesser energy, or least energy? (p. 24.)** |
| 3rd tropic level |  |  |  |
| 2nd tropic level |  |  |  |
| 1st tropic level |  |  |  |

8. Plants undergo photosynthesis: CO2 + H2O + sunlight 🡪 C6H12O6 + O2

carbon dioxide water sugar oxygen

Plants and animals undergo C6H12O6 + O2 🡪 CO2 + H2O + energy

cell respiration: sugar oxygen carbon dioxide water

Explain how the processes of photosynthesis and cell respiration are considered to be “complimentary”. (p. 40)

9. Carbon dioxide (CO2) is the form of carbon in the atmosphere. How is carbon dioxide released into the atmosphere? (p. 50)

10. Oil and gas are other sources of organic matter, containing carbon. How is oil and gas formed? (p. 50)

11. Humans have cut down trees to use the land for farming or building cities. As a result, what has been happening to the oxygen levels and carbon dioxide levels in the atmosphere? (p. 51)

12. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ What is the term for chemicals designed to kill

pests? (p. 139)

13. Describe three ways that pesticides are beneficial. (p. 139)

14. **Table 3.** Biotic and abiotic limiting factors of population size. (p. 54-56)

|  |  |  |
| --- | --- | --- |
| Factor | Two factors that cause a population to increase | Two factors that cause a population to decrease |
| Abiotic (non-living) |  |  |
| Biotic (living) |  |  |

15. Human interference often causes ecosystems to change. Provide an example of how

human interference has caused:

a. an increase in the population of a species.

b. a decrease in the population of a species.

c. an increase to the amount of carbon that enters the atmosphere.

16. Draw and label a diagram that shows the flow of water in the water cycle. (p. 49)